FIG. 1
(PRIOR ART)

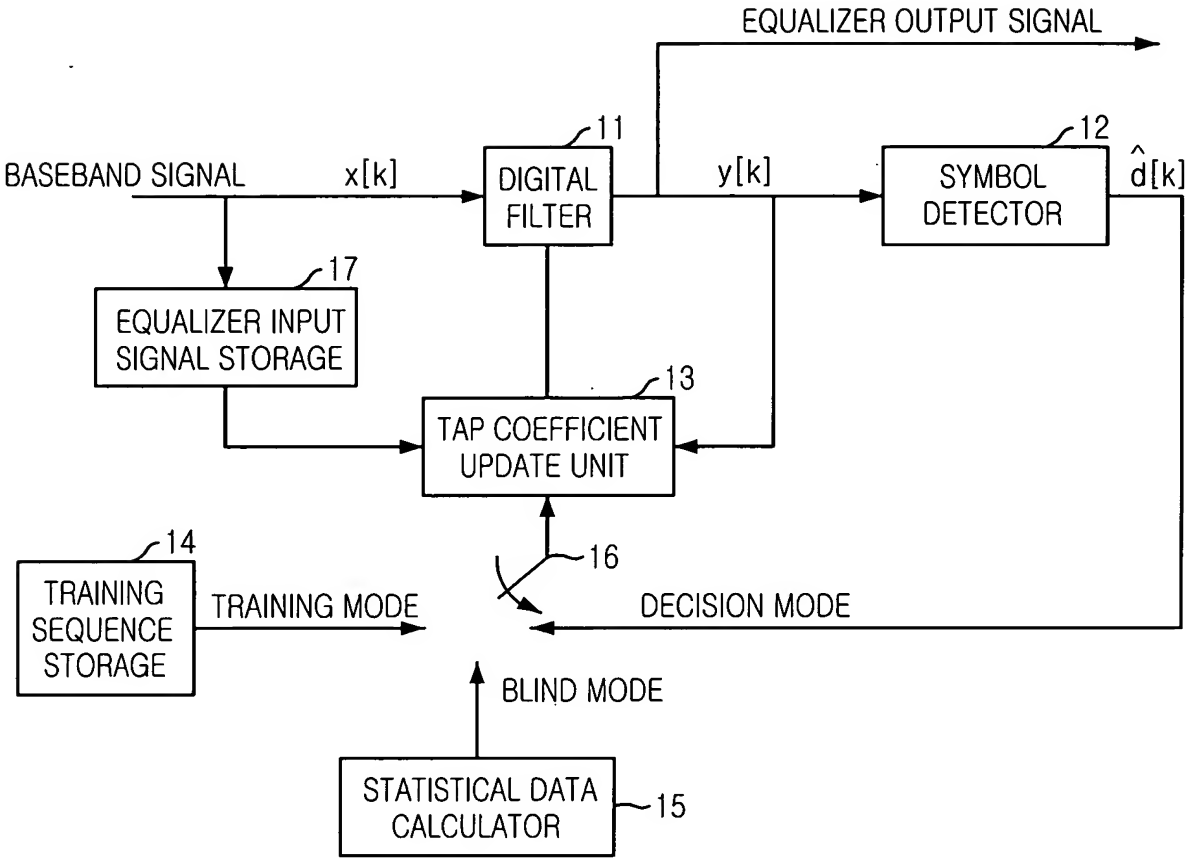


FIG. 2

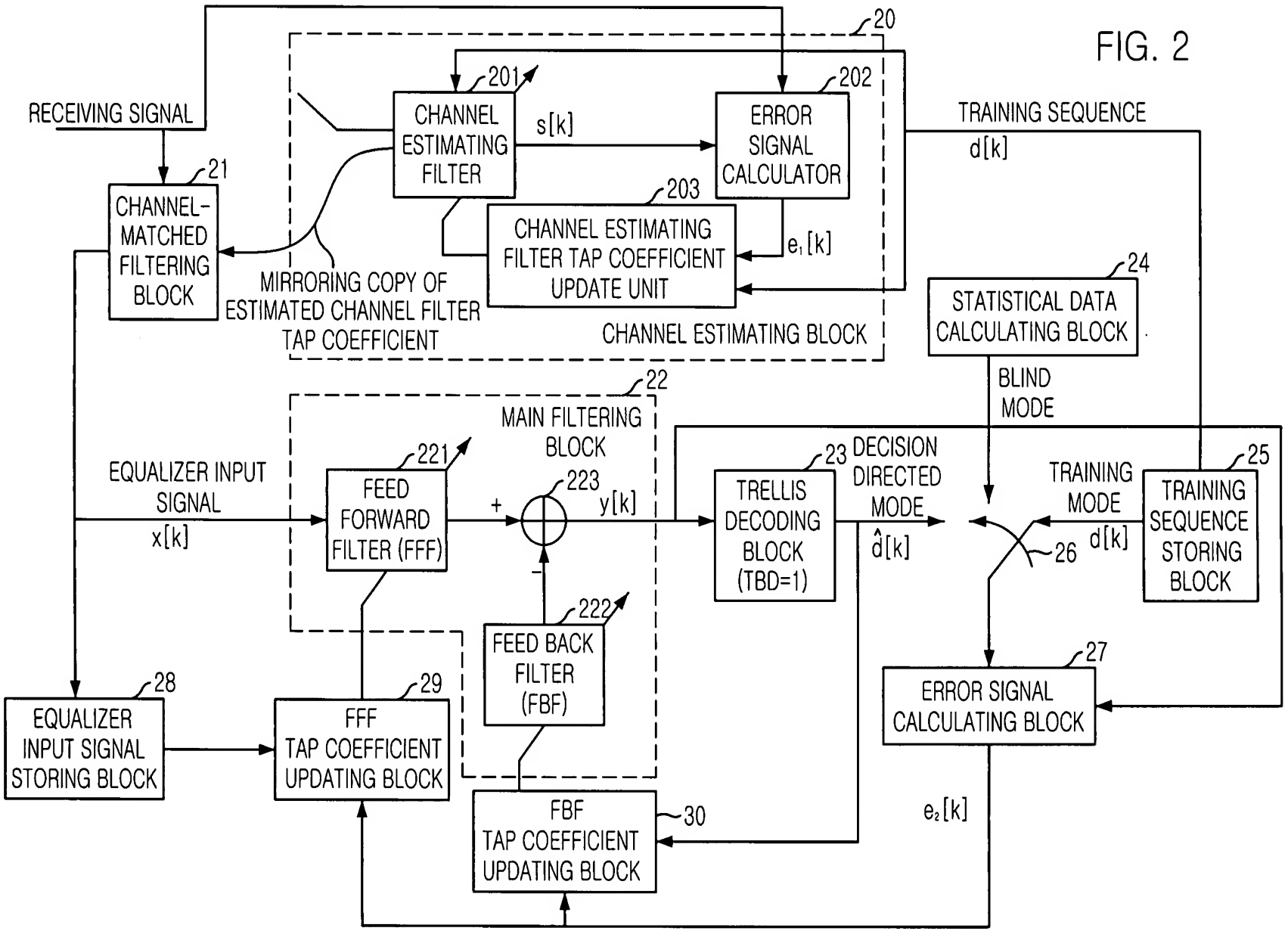

RECEIVING SIGNAL
20
201
CHANNEL ESTIMATING FILTER
s[k]
202
ERROR SIGNAL CALCULATOR
TRAINING SEQUENCE
d[k]
21
CHANNEL-MATCHED FILTERING BLOCK
203
CHANNEL ESTIMATING FILTER TAP COEFFICIENT UPDATE UNIT
e1[k]
MIRRORING COPY OF ESTIMATED CHANNEL FILTER TAP COEFFICIENT
CHANNEL ESTIMATING BLOCK
24
STATISTICAL DATA CALCULATING BLOCK
BLIND MODE
22
MAIN FILTERING BLOCK
EQUALIZER INPUT SIGNAL
x[k]
221
FEED FORWARD FILTER (FFF)
+
223
y[k]
23
TRELLIS DECODING BLOCK (TBD=1)
DECISION DIRECTED MODE
TRAINING MODE
25
TRAINING SEQUENCE STORING BLOCK
d[k]
26
222
FEED BACK FILTER (FBF)
27
ERROR SIGNAL CALCULATING BLOCK
28
EQUALIZER INPUT SIGNAL STORING BLOCK
29
FFF TAP COEFFICIENT UPDATING BLOCK
FBF TAP COEFFICIENT UPDATING BLOCK
30
e2[k]

FIG. 3
(PRIOR ART)

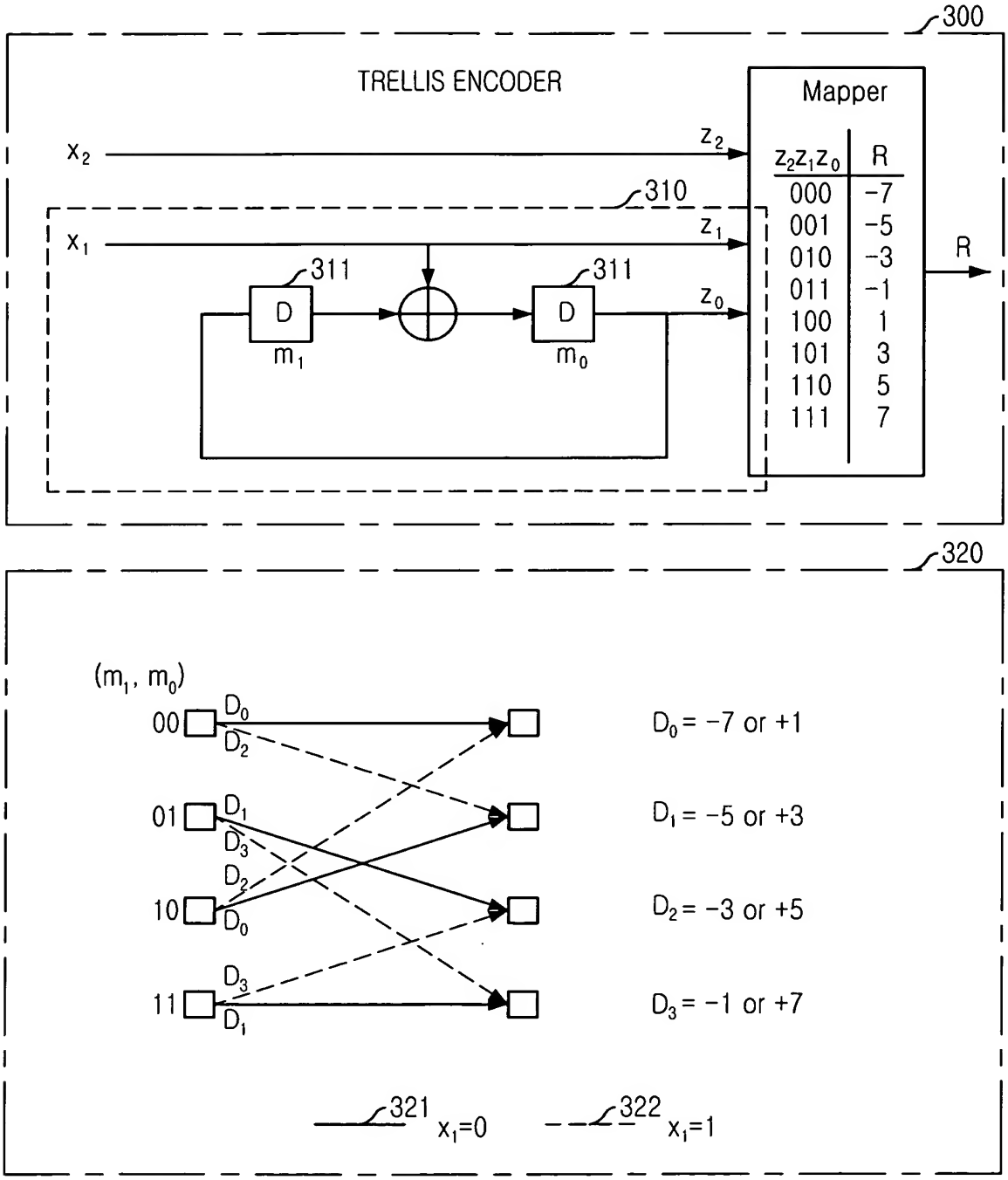


FIG. 4

TRANSMITTING SIGNAL = (1.0, 1.0, 1.0, -3.0, -5.0)
EQUALIZER INPUT SIGNAL = (1.7, -0.4, 2.5, -1.8, -5,2)
CONVENTIONAL SYMBOL DETECTOR OUTPUT SIGNAL = (1.0, -1.0, 3.0, -1.0, -5.0)
SYMBOL DETECTOR OUTPUT SIGNAL OF PRESENT INVENTION = (1.0, 1.0, 1.0, -3.0, -5.0)

410

D_0 →	8.7 or 0.7	6.6 or 1.4	9.5 or 1.5	5.2 or 2.8	1.8 or 6.2
D_1 →	6.7 or 1.3	4.6 or 3.4	7.5 or 0.5	3.2 or 4.8	0.2 or 8.2
D_2 →	4.7 or 3.3	2.6 or 5.4	5.5 or 2.5	1.2 or 6.8	2.2 or 10.2
D_3 →	2.7 or 5.3	0.6 or 7.4	3.5 or 4.5	0.8 or 8.8	4.2 or 12.2

420

D_0 →	0.7	1.4	1.5	2.8	1.8
D_1 →	1.3	3.4	0.5	3.2	0.2
D_2 →	3.3	2.6	2.5	1.2	2.2
D_3 →	2.7	0.6	3.5	0.8	4.2

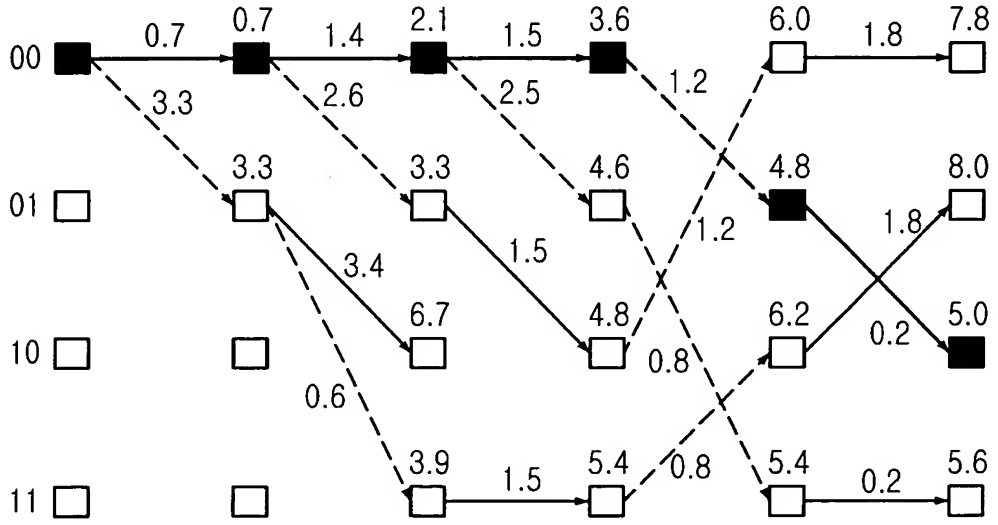


FIG. 5
(PRIOR ART)

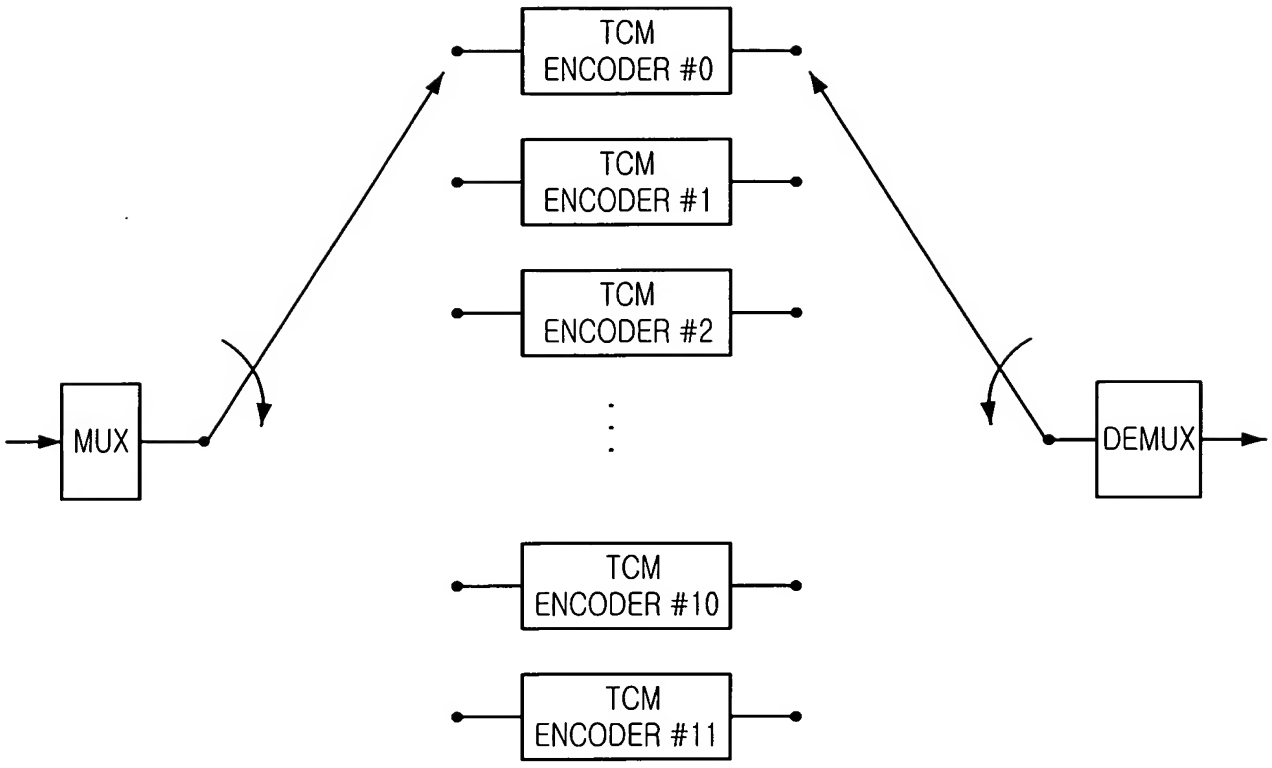
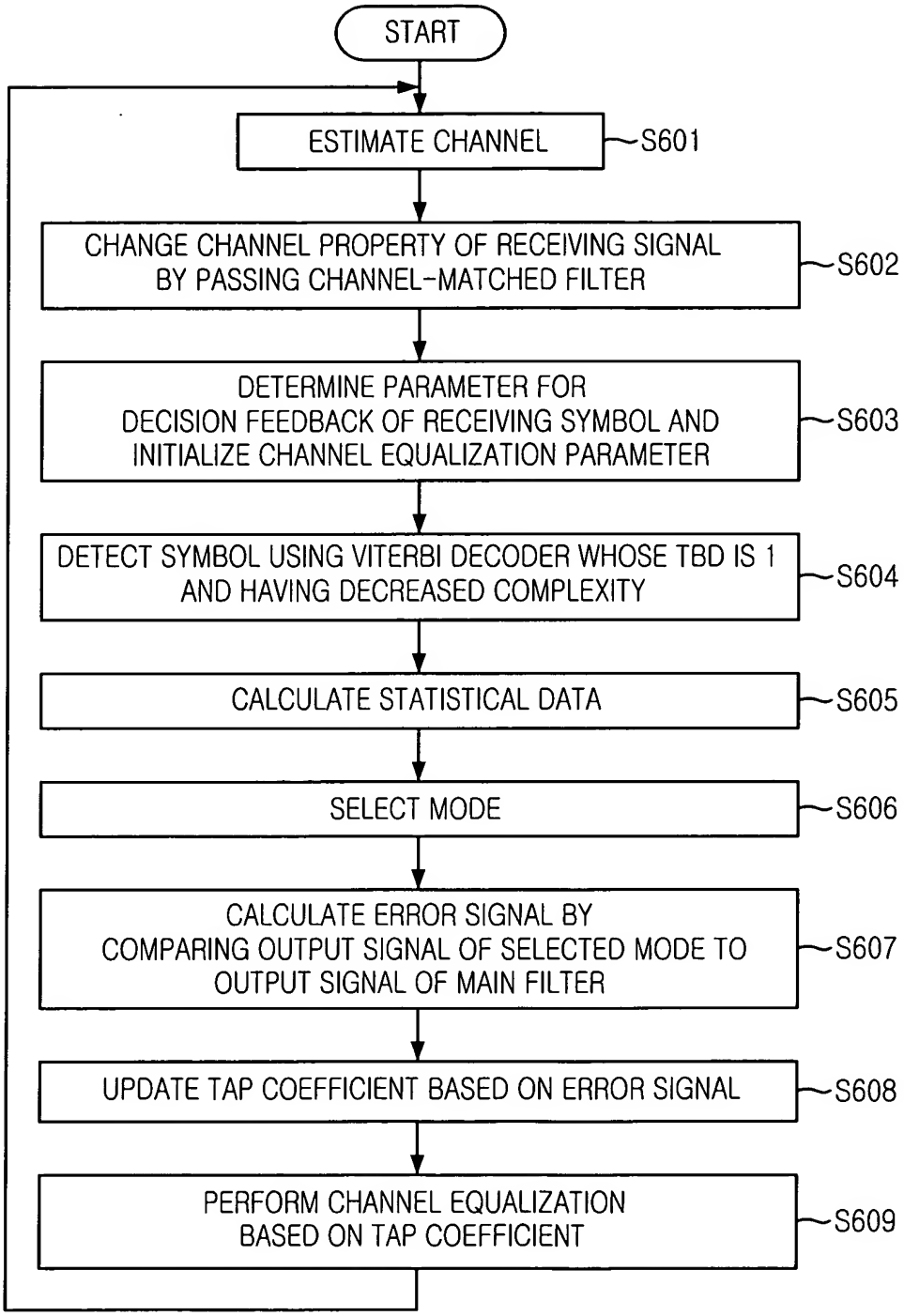


FIG. 6


START
ESTIMATE CHANNEL
S601
CHANGE CHANNEL PROPERTY OF RECEIVING SIGNAL BY PASSING CHANNEL-MATCHED FILTER
S602
DETERMINE PARAMETER FOR DECISION FEEDBACK OF RECEIVING SYMBOL AND INITIALIZE CHANNEL EQUALIZATION PARAMETER
S603
DETECT SYMBOL USING VITERBI DECODER WHOSE TBD IS 1 AND HAVING DECREASED COMPLEXITY
S604
CALCULATE STATISTICAL DATA
S605
SELECT MODE
S606
CALCULATE ERROR SIGNAL BY COMPARING OUTPUT SIGNAL OF SELECTED MODE TO OUTPUT SIGNAL OF MAIN FILTER
S607
UPDATE TAP COEFFICIENT BASED ON ERROR SIGNAL
S608
PERFORM CHANNEL EQUALIZATION BASED ON TAP COEFFICIENT
S609